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The New Partners

Integrated Data Processing

Operations Research

Introduction to Electronic
Accounting Equipment

Pegboard Accounting Methods

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LYBRAND, ROSS BROS. & MONTGOMERY

Certified Public Accountants

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Robert L. Aiken



J. K. S. Arthur



Samuel F. Mirandy



Robert W. Myers

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The New Partners

The firm is pleased to welcome into the partnership Messrs. Robert L. Aiken (Seattle), J. K. S. Arthur (Dallas), Samuel F. Mirandy (New York), Robert W. Myers and Leo V. Tinkham (Rockford), Thomas J. Snowden (St. Louis), Philip J.

Taylor (Philadelphia), and Willis K. Waterfield (Cincinnati). Their records of service to our clients have in each case well merited this recognition, and the firm is confident that they will meet their increased responsibilities in fullest measure.

ALVIN R. JENNINGS

Robert L. Aiken

Robert L. Aiken was born March 29, 1903, in Portland, Oregon. He attended grade school and University of Oregon in that city and the State Preparatory School of Colorado in Boulder, Colorado. He is an honorary member of Beta Alpha Psi, Delta Chapter, University of Washington.

He joined the firm in 1929 and was in the Portland office until 1937, when he was transferred to San Francisco where he remained until 1948. Since that year he has been resident manager of the Seattle office. He is a certified public accountant of the states of Oregon, California and Washington, is a member of Societies of Certified Public Accountants in those three

states, and is also a member of the American Institute of Accountants. He has served on the boards of directors of the Oregon and Washington State Societies, as well as on various committees of the Societies in the three Pacific Coast states.

Mr. Aiken is a member of the board of directors of the National Association of Cost Accountants, Seattle Chapter, is employment director of that chapter, and is a member of the board of governors of the Puget Sound Chapter of the Institute of Internal Auditors. He is a member of the Estate Planning Council, the Rainier Club and the Washington Athletic Club, all of Seattle.

J. K. S. Arthur

Born in London, England, in 1918, Kenneth Arthur was brought to Dallas, Texas, by his parents in 1919. He was educated in the

Dallas public schools, Rice Institute and Harvard Business School from which he was graduated in 1947. During World War II he served in

the Field Artillery both as an enlisted man and commissioned officer, having attained the rank of captain upon his discharge in 1946 and having seen foreign service both in Europe and the Philippines. He joined the staff of our Dallas office upon his graduation from Harvard Business School.

Mr. Arthur is a certified public accountant of Texas, is a member of the American Institute, the National Association of Cost Accountants, Petroleum Accountants Society of Dallas, American Ac-

counting Association, and Dallas Estate Council. He has taken an active interest in C.P.A. work, currently serving on the Committee on Audit Procedures of the Dallas Chapter of C.P.A.'s. He is a member of the Membership Committee of the Dallas Chamber of Commerce, is working in the current local Community Chest Campaign, and is chief adviser to a Junior Achievement Company.

Mr. Arthur is married and has two sons.

Samuel F. Mirandy

Samuel F. Mirandy was born in Cohoes, New York, in 1910, and received his early education in the public schools of Mechanicsville, New York. After attending Temple University for one year he continued his college education at Columbia where he was graduated from the School of Business in 1934. He joined the staff of our New York office in September of that year. After an initial period of seven

years on the audit staff, his association with our firm continued as a member of the New York office Tax Department.

He is a certified public accountant of New York and is a member of the American Institute of Accountants and The New York State Society of Certified Public Accountants. He is married, has a son and a daughter, and lives in Hasbrouck Heights, New Jersey.

Robert W. Myers

Robert William Myers was born in Salina, Kansas, on April 7, 1905. After attending Kansas Wesleyan University in Salina for one year, he entered Kansas State College at Manhattan, and received a Bachelor of Science degree in Commerce from that university in 1929. While

there, he became a member of Phi Kappa Phi, honorary scholastic fraternity, and Sigma Tau, honorary engineering fraternity.

Upon graduation, Mr. Myers joined the staff of the Chicago office of the firm and was transferred to the Rockford office at the time it



Thomas J. Snowden



Philip J. Taylor



Leo V. Tinkham



Willis K. Waterfield

was opened in November, 1929. He has been co-manager of the latter office since July, 1953. Mr. Myers is a certified public accountant in the State of Illinois and is a member of the American Institute of Accountants, the Illinois Society of Certified Public Accountants, and the Rockford Chapter of the National Association of Cost Accountants. He was the first Chairman of an organization of Certified Public Accountants in Northern

Illinois which later became the Northern Chapter of the Illinois Society of Certified Public Accountants. He is also a past Secretary and Treasurer of Forest Hills Country Club. Mr. Myers is presently serving on a special committee to study Rockford's financial problems and make recommendations to the Chamber of Commerce and the City Council. He is married and has two daughters.

Thomas J. Snowden

Thomas J. Snowden was born August 8, 1907 in Philadelphia. The family later moved to Atlantic City, New Jersey, and he graduated from Holy Spirit High School in that city and joined the staff of a local public accounting firm. Subsequently, he left the public accounting field to take employment in private accounting with a large national organization but eventually returned to public accounting. His residence changed from Atlantic City to St. Louis to Chicago and again to St. Louis; meanwhile his education was continued in various universities in or near his city of residence. He joined the staff of the St. Louis office of L. R. B. & M.

in 1947 and became resident manager in 1950.

Mr. Snowden is a certified public accountant in the states of Illinois and Missouri and is a member of the American Institute of Accountants, the American Accounting Association, the Missouri Society of Certified Public Accountants, and the National Association of Cost Accountants. He is presently serving as a Member of Council of the Missouri Society and is on several committees of the St. Louis Chamber of Commerce.

Mr. Snowden is married and has two children, a boy and a girl, and lives in St. Louis.

Philip J. Taylor

Philip J. Taylor was born December 30, 1913, in Philadelphia where he attended the public schools and graduated in 1932 from German-

town High School and in 1935 from the Evening School of Accounts and Finance of the University of Pennsylvania. He also obtained the de-

gree of LL.B. from LaSalle Extension University in 1946.

In 1935, he joined the staff of the Philadelphia office of Lybrand, Ross Bros. & Montgomery and in 1939, obtained his Pennsylvania C.P.A. Certificate. His professional memberships include the Pennsylvania Institute of Certified Public Accountants, the American Institute of Accountants, the National Association of Cost Accountants and the American Accounting Association.

He has served on various committees of the Pennsylvania Institute and as a Director of its Philadelphia Chapter. He is a past president of The Exchange Club of Philadelphia and at present is serving as class vice president in the University of Pennsylvania Evening School Alumni Society.

Mr. Taylor is married, has a daughter and a son, and resides in Whitemarsh, a suburb of Philadelphia.

Leo V. Tinkham

Leo V. Tinkham was born on April 4, 1912, in Wheatfield, Indiana. He received his early education in the public schools of Granville, Illinois, and was graduated from the University of Illinois, in 1933, with a bachelor's degree in commerce. In 1934, he received a bachelor's degree in education from Illinois State Normal University and taught in the public schools of Illinois until May, 1942, when he joined the staff of the Rockford office of the firm.

He became a certified public accountant in Illinois in 1943, and is a member of the American Institute of Accountants and the Illinois Society of Certified Public Accountants. He is a member of the Chapter Activities Committee and the Survey Committee of the Illinois Society. He has also been active in the Rockford Chapter of the National Association of Cost Accountants.

Mr. Tinkham is married and has two children, a girl and a boy.

Willis K. Waterfield

Willis K. Waterfield was born on a farm near Georgetown, Ohio, on May 29, 1907. He attended country grade school and Georgetown High School. He was graduated from Ohio State University in 1928 with a B.S. degree. Upon graduation he entered the employ of the

Washington Savings Bank & Trust Company of Cincinnati. In December, 1933 he joined the staff of the Cincinnati office.

Mr. Waterfield is a certified public accountant in Ohio, is a member of the Ohio Society of Certified Public Accountants, the American Insti-

tute of Accountants and the National Association of Cost Accountants. He has held the offices of Secretary-Treasurer, Vice President and President of the Cincinnati Chapter and is presently serving his third year as State Director of the Ohio Society of Certified Public Accountants. He has also served on various committees of both the Cincinnati Chapter and State Society. From 1944 to 1953 he was a member of the faculty of the University of Cincinnati where he lectured on accounting in the Evening College.

He has served in various capacities for city and county charitable organizations. He is a member of the Cincinnati Athletic Club and the City Farmers Club.

Mr. Waterfield is married and, with his wife and daughter, resides in Mt. Washington, a suburb of Cincinnati. On summer weekends the family enjoys visiting the farm at Georgetown, where Willis spent his boyhood days and which he now operates as a modern dairy and livestock farm.



PART II

FOREWORD

One of the important services rendered by our firm has to do with assisting clients in areas which might be called "management accounting." These areas encompass the improvement of the quality, usefulness and timeliness of internal reports to management, betterment of the efficiency of the accounting procedures being used by the client, development of improved accounting systems and methods, and many other areas with their roots in accounting. The following articles discuss subjects that are currently in the conversations of progressive managements and cover some of the methods and techniques which have been developed to enhance the usefulness of the tools employed by management to aid in arriving at appropriate and timely decisions. The articles in this section have been written by members of our Detroit office who have specialized in rendering management accounting services.

Integrated Data Processing

BY EARL W. REYNOLDS

Last year, several hundred businessmen gathered in New York at a conference sponsored by the American Management Association. This conference consisted of a presentation by representatives of the United States Steel Corporation of the concept of integrated data processing, as a method for speedy and economical clerical operations. This idea has aroused great interest in business circles.

Integrated data processing is a system of data processing in which the original entry of data into the system is made in a manner that eliminates unnecessary rewriting. An example of this method is the recording of original data on conventional office machines equipped to produce a punched paper tape as an automatic by-product. Any further processing of the data is accomplished without manual operations by introducing the punched paper tape into the tape reading mechanisms attached to other conventional office machines. Paper tape can be punched with codes which will cause the machine to stop at desired points for the manual insertion of variable or additional data. At the same time, another tape punching mechanism punches both the data from the previous tape and the new data, or any part of

either, into another tape for further processing or for storage.

The mechanization of data processing under this concept requires the use of available office machines in a comprehensive and yet selective manner. It requires that there be a basic compatibility between different types of machines and between machines of different manufacturers (adding machines, typewriters, addressograph machines, bookkeeping machines, calculators and various special converting machines). A common language is required in order to transfer raw data mechanically between the various types of equipment.

Common Language

The common language must be a medium that: (a) comprehends the 26 letters of the alphabet, the 10 decimal digits and a minimum number of special characters and instructions; (b) has the ability to mechanize directly the transfer of raw data between office and communication machines manufactured by different suppliers.

Various media may meet the requirements of a common language. A five-channel punched tape communication code was selected by U. S. Steel as the common language for its equipment. This code is

convenient for use with Western Union and other communication facilities between the accounting locations of a large company.

Binary System

In a binary system of communication it is possible to give representation to only one of two possible conditions—on, off; yes, no; 1, 0; or, a punched hole or magnetic charge, or the absence of a punched hole or magnetic charge. When this

code is used on punched paper tape, for example, the holes and the blank spaces are placed in predetermined positions or "channels," making possible a large number of combinations which can be interpreted as numeric, alphabetic or other symbols, or instructions. Following is an illustration of the combinations which are used in the uniform five-channel punched tape communication code to represent various symbols and instructions:

(Holes in the tape are represented by ----- 0.)

Letters of the Alphabet

	Channel Positions			
	(5)	(4)	(3)	(2) (1)
A				0 0
B	0	0		0
C		0	0	0
D		0		0
E				0

Instructions:

Leave a space.....
 Interpret all subsequent characters as numbers.....
 Interpret all subsequent characters as letters of the alphabet.....

Numerical Digits

	Channel Positions			
	(5)	(4)	(3)	(2) (1)
1	0		0	0 0
2	0			0 0
3				0
4		0		0
5	0			

Channel Positions

	(5)	(4)	(3)	(2)	(1)
			0		
	0	0		0	0
	0	0	0	0	0

The use of the last two instructions shown above permits the same set of binary symbols to be used for letters of the alphabet or for numerical digits, as shown for E and 3.

Some of the office machines which at the present time can be obtained equipped to read and/or punch tapes or cards in five-channel code are:

Electric typewriters

Adding machines

Calculators and computypers

Bookkeeping machines

Telegraphic communication devices

Addressograph machines

Graphotype machines

Production recorders

It is to be noted that integrated data processing may be entirely mechanical and does not require electronic devices.

Example of Integrated Data Processing

Following is an application in the clerical processing of sales covering the following areas:

- Area 1. Sales Order and Acknowledgment
- Area 2. Production Planning and Control
- Area 3. Inventories
- Area 4. Shipping
- Area 5. Invoicing
- Area 6. Accounts Receivable
- Area 7. Sales Statistics

At the sales office, a customer's order is prepared on an electric typewriter with tape reader and punch. For repeat orders a tape pre-punched with information which is repetitive on each customer's orders is on file at the sales office. This covers such items as charge to, sold to, routing and rate. In a typical sales order prepared in this manner, more than 70 per cent of the information is typed automatically from pre-punched tape. The balance is manually typed and represents the variables for the specific order such as order number, date, item description and quantity.

In the course of typing the order form (an offset master), there is simultaneously produced two five-channel punched paper tapes for use at the manufacturing plant. One tape carries full order detail for invoicing purposes. The other tape carries selected data for production planning and scheduling purposes.

At the plant, the offset master is used to produce the order acknowl-

edgment, as well as production orders for the various manufacturing units involved. The tape for production planning purposes is converted to tabulating cards for each order item by a tape-to-card unit. The cards created are used in a mechanized production planning and scheduling system. The tape can also be used to create plates on the automatic graphotype for preparation of shipping tags and labels.

When shipment is made on the order, the other tape, furnished by the sales office and carrying full order detail, is fed into a combination electric typewriter calculating unit and the invoice is prepared from the shipping papers and the common language tape.

Much of the information to be entered on the invoice is automatically typed from the tape. Information that varies from the original recording of the sales order as, for example, the actual quantity shipped, is manually typed. The price extensions and total amount of the invoice are calculated automatically and entered on the invoice.

The combination typewriter calculator can also produce punched tape and punched cards. In the preparation of the invoice, these features are used to the extent that a punched card is produced automatically for each item shipped, carrying all the codes and details necessary for sales statistical pur-

poses. Classification and recapitulation is accomplished through punched card accounting machines. Further, in the course of preparing the invoice, a punched tape is produced carrying the necessary detail for posting to accounts receivable ledgers. Posting to the accounts receivable ledger card is achieved automatically by feeding the punched tape for the invoice into a tape reading and punching bookkeeping machine.

Conclusion

The use of five-channel punched tape doesn't restrict the system to using only those machines that can process five-channel punched tape or cards. The information on the punched tape can be recorded on either seven or more channel punched paper tape or magnetic tape, by use of a machine called a convertor. The new tape may then be used in high speed data processors.

To summarize, integrated data processing can be accomplished by:

Recording data automatically or manually at the time and place of origin by using

conventional office machines equipped to produce a punched tape as an automatic by-product.

Requiring that all subsequent processing of the same data be accomplished without manual operations by introducing the punched tape into the tape reading mechanisms attached to other conventional office machines.

While the concept of integrated data processing has been popularized by U. S. Steel Corporation and other large corporations, its use is not restricted to the largest concerns but can be adopted for use in medium sized and even small companies. The basic systems idea has substantial merit for reducing the cost of clerical operations and for speeding the flow of required reports to management. While U. S. Steel has selected the five-channel punched paper tape as the best medium for recording and perpetuating data for its use, smaller companies may find other media better adapted to their requirements. We should constantly be searching for the best means of perpetuating data and eliminating needless repetitive rewriting.



Operations Research

BY JOHN McCULLOUGH AND A. KARL SCHARFF

Top management is no longer content with the intuitive selection of one of several good answers. They have found that it pays to get the best answer, the optimum answer, the answer which yields the maximum profit.

During World War II, our top military people, as well as the British, found that this principle pays off. Higher mathematics was brought into play in order to determine the optimum answer to problems ranging from how to direct the energy of the foot soldier, to the more sophisticated problems of how best to track down submarines or to bomb enemy territory. This approach became known as Operations Research and, during the war, practical mathematical methods were developed which are now being used in the business world.

The difficulty with intuitive methods used by the rugged individualist and many executives in larger organizations, is twofold. First, they cannot prove that their answers are optimum (although mathematical methods have shown that they are usually remarkably close). Second, responsibility for developing these answers is entrusted only to men who have had years of practical experience. Such

men are extremely valuable and modern analytical methods permit them to make better use of their time.

The basic concept of operations research is not new. Julius Caesar employed its principles in analyzing a dish washing routine which used one wash basin and one rinse basin, although twice as much time was required for the wash operation as for the rinse operation. The installation of a second wash basin doubled capacity with only a 50 per cent increase in equipment.

Operations Research Society of America was organized in May, 1952, to "Provide a means for the advancement of and diffusion of knowledge concerning Operations Research." Several universities have organized courses in operations research, among which are Massachusetts Institute of Technology, Columbia University, Case Institute of Technology, Tufts College, Pennsylvania State and University of California at Los Angeles. During the past several years, several consulting firms have established departments for operations research and have performed projects in this field for business concerns. Several large corporations have created departments under this or some similar name. Average time for a major

project is estimated to be six months, involving a cost of possibly \$35,000 to \$50,000.

An operations research study has four stages:

1. The definition stage
2. The collection of data (most time consuming)
3. Establishment of a yardstick for performance
4. Application of results.

Problems capable of solution by operations research must contain reliable data that can be expressed in quantitative form. The quantitative relationships can then be put in the form of equations, in order to arrive at a solution.

Linear Programming

Many of the problems arising in the business world are susceptible of presentation in the form of linear equations. A linear equation is one in which the unknowns are expressed in the first degree. Where there are more equations than unknowns, we can have more than one solution for each unknown. The problem then is to determine the solution which yields maximum or minimum results for one of the unknowns, usually net profit or cost.

One manufacturer of several products was basing his production on sales forecasts. Production was scheduled at an even level throughout the year under a policy of minimizing overtime. The Treasurer of the company objected because it

entailed tying up money in large inventory build-ups during certain periods of the year. An operations research team studied one division that produced seven different product lines and observed that five of these lines could be produced simultaneously with a normal work force. Equations summarized the total cost of producing and stocking all seven lines. From these equations they then arrived at a production schedule yielding the lowest possible total cost.

The operations research team had put what was previously considered intangible into quantitative terms. These variables included such matters as the costs of hiring and training new workers, the additional cost per shift of production as overtime was employed, the cost of carrying one unit for one month in inventory (considering alternative uses for funds), and the loss of profits due to inability to fill orders. As a result of this study, a new production schedule was devised which called for more overtime and reduced inventory; it was proved that this schedule would reduce *total cost* for overtime and inventories. Another conclusion which came from this analysis was that costs could be further reduced by distributing vacations over a ten-week period instead of closing down the entire plant for two weeks in July.

It should be noted that the purpose of linear programming is to determine the best possible course

of action under an established set of facts. The procedure is not rigid; after a formula has been established it can and should be recomputed as circumstances change. Linear programming may also be useful to study alternative solutions, that is, it can reveal the cost of programs which differ from the "best program." The differences may then disclose to management the cost of specific good will policies.

The determination of the most profitable mixture of chemical components in an oil refinery to make certain grades of aviation or high test gasoline, is an illustration of a problem solvable by linear programming. It is possible to give expression in mathematical terms to such factors as limits on capacity, and chemical characteristics of the resulting product. Similarly, other problems relating to the most profitable "mix" of either raw materials or manufactured goods are susceptible of solution by this method. These solutions have resulted in impressive savings to industry.

Another problem, susceptible of the same type of solution is the so-called transportation problem. A corporation has factories producing products in various parts of the country and various warehouses located in other parts of the country. The costs of manufacturing and shipping the various products all differ but can be expressed in mathematical terms. Here the prob-

lem is one of determination of what quantities should be shipped from what factory to what warehouse so as to minimize costs.

Mathematical Methods and the Electronic Computer

Wayne University in Detroit has established a Computation Laboratory to serve business in accounting and scientific problems. It owns and operates a \$275,000 electronic computer built by Burroughs Corporation. Our representatives have taken several of their educational courses and have had demonstrated to them how an electronic computer solves a set of simultaneous equations. The electronic computer is the fastest computer but certainly the most dependent and most helpless. It can follow three types of instructions:

- A. Transfer information from one storage location or medium to another
- B. Add and subtract (It can therefore also multiply and divide)
- C. Follow a routine of instruction, A, or a routine of instruction, B, based on the relative magnitudes of numbers at a selected point in the routine.

Programming is the combining of these three types of instructions to solve a given problem, and the combination of all of the instructions necessary to the solution is called a program. Coding is the act of translating the program into the instruction code of the particular computer.

Programming is the most involved step in preparing a problem for a computer solution. It is extremely detailed because the problem must be analyzed and a solution developed from following the steps which can be broken down into the three types of instructions described above. In the solution of a simple set of simultaneous equations, the programming alone took many times the space of the solution. This did not include the coding. For this reason there has been created a demand for patient mathematicians who can convert algebraic equations to programs which are susceptible of coding and thus solution. These people are known as programmers.

Where the number of simultaneous equations is not too large, the problems are solved, in practice, with desk calculators. However, the solution of many problems employing these techniques requires the use of electronic computing equipment because of the very large number of arithmetic computations necessary. Solutions may be a routine procedure after a linear program has been formulated, but the large number of computations involved requires a rapid calculator in order to make the solutions available for timely use. The cost of owning computer equipment may well be a deterring factor in most business concerns but this should not prevent the use of linear programming techniques since computing centers are available, where

problems may be taken for solution at reasonable cost. Remington Rand and IBM both have service centers in New York. As more machines become available, it is anticipated that centers will be opened in the larger cities of the country.

The Bonus Problem or Allocation Problem

In solving the typical bonus problem or interdepartmental overhead allocation problem, the programmer follows the iterative method of solving the equations. This is the approximation method followed by those who are not familiar with algebra. The approximation method simply assumes a solution for all the unknowns and arrives at a first solution which is closer than the assumed solution. The first solution is then employed to arrive at a second solution, the second to arrive at a third, and so forth. The process is stopped when a solution is reached which has the desired degree of approximation to complete accuracy. The approximation method is easy to understand and it has been demonstrated mathematically that it is entirely sound. It is usually less time-consuming than the algebraic method, for the simpler problems.

Why Should Operations Research Be of Interest to a Public Accountant?

As public accountants, we should be familiar with all accounting an-

alysis techniques available to our clients which may increase their profits. The solutions of many problems which come within the scope of operations research techniques require men with specialized technical training in mathematics, computer operation, etc., and we do not believe that public accountants need to become specialists in such fields.

We should, however, be familiar with the types of problems which can be solved by operations research methods, where technical assistance can be obtained, and in many cases, we should be able to assist the clients in gathering the cost and statistical data that underlie the linear equations.



Introduction to Electronic Accounting Equipment

BY JOHN J. FOX

As professional accountants we are vitally concerned with developments in the field of electronic computers designed for use in business. As auditors we will be required to audit records processed electronically. We should be prepared to assist and counsel in the installation of an electronic system to insure that adequate internal controls are preserved and that provision is made for records that can be audited. We should be prepared to counsel and advise our clients on the equipment to do their accounting job most economically. Underlying any electronic installation, there is an enormous amount of fundamental systems and procedures work that must be done by procedures people with some knowledge of electronic equipment. We should be prepared to assist in this work if requested.

Electronic office equipment (ranging from small electronic calculators which rent for a few hundred dollars a month to large scale computing systems that rent for over twenty thousand dollars a month) is now in actual operation; many unfilled orders for electronic computers have been written by the manufacturers. Most of the leading manufacturers of office machines have either introduced electronic equipment, have

such equipment in a developmental stage or have redesigned their equipment to adapt it to electronic systems.

An electronic computing system can store data internally and perform certain basic operations on data such as addition, subtraction, multiplication or division. It can also compare two numbers and, depending upon whether one is greater than the other, set in motion a desired sequence of computations. It can round off the result of computations. It can perform these operations at such rapid speed that operating time for individual operations is usually measured in terms of millionths of a second.

The computer can perform its operations in any desired sequence, which permits it to make a series of calculations. For instance, an electronic computing system can compute the entire payroll at one pass of the data. A conventional punched card installation can likewise perform all the steps required to prepare a payroll, but requires a number of passes of the punched cards through various pieces of equipment. It is generally not economical to provide for handling isolated exceptions to general procedures mechanically in punched card tabulating systems. Excep-

tions are usually processed manually in a separate routine. Because of the capacity of an electronic computer to refer with equal ease to any set of instructions that have been provided for it, the electronic computer can process exceptions to the general routine as efficiently as any other parts of the program.

Computer applications can be developed in any area in which there is a large volume of repetitive data to be handled. Among the most common business applications for computers are: payrolls and labor distribution; billing; inventory control; production planning and control.

Economic Justification of Computers

Installation of computers must be justified from an economic viewpoint in one of two manners:

- (1) By reducing the cost of clerical processing;
- (2) By furnishing management with better data for decisions—producing more data, more timely data, or mathematical solutions to management problems.

The potential benefit from the second class of items may far outweigh those limited to clerical cost savings; however, such benefits are not usually susceptible of advance objective valuation. The consensus of those concerned with business applications of computers is that the cost of the computer should be justified initially on the basis of reductions in clerical costs.

The determination of whether an electronic computer will produce savings in clerical costs in any particular company can be made only by comparing the estimated cost of clerical processing with electronic equipment (based on a study of the proposed application) with the costs of performing the same operations in other ways. There is no rule of thumb that can safely be used in estimating probable savings. However, the experiences of companies that have made such studies are of interest to those contemplating similar investigations.

A study made at the General Electric Company at Louisville indicated that savings may be expected from the use of a large scale Univac computer (monthly rental charges for this equipment probably exceed \$20,000) when their total employment reaches 5,000 persons. This estimate is based on the use of the equipment for numerous clerical operations. In another company, planning installation of an IBM Type 702 large scale data processor, the initial survey indicated that a single application of the computer to the preparation of hourly payrolls for 50,000 employees would produce savings, even though machine rentals would exceed \$20,000 per month. This single application is estimated to require 30 hours of computer time weekly.

It is interesting to note that the systems study made by the latter

company, in connection with the investigation of the computer, has disclosed methods improvements that can be made without introducing a computer that will substantially reduce the clerical costs. Those responsible for investigations of the economic feasibility of computers should always be on guard against attributing to the computer, cost reductions from methods improvements that can be made whether or not a computer is installed. Also, those debating whether the cost of such investigations should be incurred, should consider the probable savings from methods improvements that may result regardless of the ultimate decision as to whether to install a computer.

Description of Electronic Computing System

We are all familiar with the operation of mechanical calculators, some of which are electrically powered. The numbers to be computed, "data," must be inserted into the calculator, usually by depressing certain keys. This is the "input" of data. The calculator has certain dials or registers in which the data and, later, the re-

sults are "stored." We direct the machine to perform addition, subtraction, multiplication or division, as we choose, by depressing the appropriate command key. This instruction to the machine may be thought of as the "program" which directs the machine to perform the required calculation. The calculation is made automatically. The operator requires no knowledge of the inner workings of the calculating mechanism. The results of the calculation appear on certain dials of the machine, which is the "output" mechanism.

I have presented this rather laborious illustration of the operation of a mechanical calculator because it is analogous to the operation of an electronic computer, and because I believe it may facilitate understanding the terminology of the field, which has, to date, been one of the principal barriers to greater understanding of electronic equipment by accountants.

An electronic computer may be likened to a mechanical calculator, in that it consists of component parts which perform the same basic operations previously noted for the mechanical calculator:

<i>The devices for</i>	<i>Are known as</i>
(1) Controlling the operations.....	Control registers
(2) Inserting data into the machine.....	Input devices
(3) Storing data and results in the machine.....	Memory
(4) Performing calculations.....	Accumulator
(5) Reporting results.....	Output devices

While the ordinary calculator operates on mechanical principles, the electronic computer, as the name implies, operates on electronic impulses. The use of electronic principles and equipment results in computations being made at lightning speed. Logical operations of great complexity can be built into the equipment. Nevertheless, the use of the equipment does not require any knowledge of electronic science. The user need only know what operations the machine can perform and how to command it to perform them.

Methods of Input and Output

Since electronic computers are designed for high speed computations, one of the major problems in adapting computers to business data processing problems has been to develop methods of input and output of data at sufficiently high speeds to make adequate use of the speed inherent in electronic computations. Some of the small and less complex computers utilize keyboard input and electric typewriter output. These items may also be furnished as part of the control mechanism in larger computers to handle odd bits of data or exceptions. Adequate speed is not generally available by these methods.

Punched cards of the same type used in tabulating equipment may be utilized for both entry and exit of data. Card readers and card

punches are both available as auxiliary equipment in some systems.

Paper and magnetic tape have been developed as the most rapid media for entry and exit of data. Paper tape, similar to that used in teletype facilities, is used in some systems. Data are recorded on the tape through punching of holes in a special code, using binary symbols. Information is also recorded in the form of magnetized spots on magnetic tape of steel or plastic.

Equipment is available to convert data recorded on punched cards to tape and to convert data recorded on tape to punched cards. Equipment is also available, or is in the developmental stage, for recording data on tape as a by-product of the operation of common office machines such as adding machines, bookkeeping machines, time recorders, etc. Such devices may also be activated by tape. Tape recorded data may be transmitted over communication facilities such as Western Union leased lines and even telephone lines.

High speed printers have also been developed for use as an output device on electronic computers. Equipment currently on the market will print results in any desired arrangement, on accounting or other forms, at a rate of 900 lines per minute. Extensive research is currently being devoted to the development of even higher speed printers. Greater output speed can be obtained, currently, by recording re-

sults from the computer on tape and using the tape to activate high speed printers in independent operation.

These methods of input and output are those which are most generally in use in the computer field today. Any particular computer may be designed for use of one or more of the methods mentioned. Some computers may utilize all of the methods mentioned and may provide for several units of each. The units for input and output of data should be tailored to the specific use contemplated for the computer.

The operation by which electronic equipment interprets the data recorded on an input medium and converts that data to machine code for recording in the computing machine is known as "reading." The operation by which the data contained in the machine is converted to the code of the output device and recorded thereon is known as "writing."

Storage of Data

Data consisting of alphabetic, numeric or other characters to be acted upon by the computer, instructions for operation of the machine, and results of computations, may be stored in the computer. The ability to store data, which is referred to as "memory," facilitates the making of complex computations. Computers have been designed with capacities for storing data ranging from a few hundred to

several hundred thousand digits of numeric or alphabetic information.

Electronic scientists have developed various devices for storing electronic impulses in forms that can be remembered and interpreted in terms of a code. Some of the devices for storing data that have been adapted to use in computers are magnetic drums, cathode ray tubes, magnetic cores and acoustic or mercury delay lines.

Although extensive technical descriptions of each of these devices are available, it may be informative to review in nontechnical terms the operation of a few of the storage devices being used.

The cathode ray tube is familiar to everyone as the picture tube in the home television receiver and is used in computers to produce what is known as "electrostatic storage." Electron beams focused on the face of the tube result in a charged area or "bit." These charged bits are capable of being interpreted in terms of a code by the machine. Within each tube these bit charges are spaced in a grid pattern. The internal circuitry of the machine is such that groups of "bits" will be linked together to form binary characters of a code. Groups of a specified number of characters, known as a "word" may be stored in any desired position on the grid. The positions are referred to as the data "address." The machine can also "read," that is, locate the data contained in any particular address,

and transfer such information to other units of the equipment. Data placed in any address will remain there until other data are "read" into the same address, or until the power is turned off. It should be noted that data recorded in *electrostatic* memory will be lost or erased through any interruption of the electric current, whether intentional or accidental. In the event of accident, such as power failure, the problem must be reworked. The original input records would still be available, since they would not be affected by the power failure and the installations can be designed so that, at the worst, only a few hours of work on the computer will be lost because of power interruption.

Magnetic drum storage utilizes the surface of a drum, usually of steel or aluminum construction, which either has been wrapped with wire or sheathed with plated copper. The drum is usually divided into a number of channels, an area running the full circumference of the drum. Each channel is divided into a number of sections. Data may be read into or out of each of these sections. Data recorded on a magnetic drum can be erased only by reading new data into the space occupied by the old data. Interruption of power does not disturb data recorded on a magnetic drum.

It appears that magnetic cores, which consist of wires through the hollow center of a ring of ferrous metal, capable of receiving and re-

taining impulses of a binary character, will be widely used in the future.

For practical purposes it is unnecessary for the operator to be familiar with the internal circuits of the equipment. The various memory spaces or "buckets" are usually assigned numeric addresses. In planning any problem on a computer, the planner or "programmer" must at all times plan the storage locations in which each character of data is to be stored.

Operation of an Electronic Computer

In operating an electric or mechanical calculator the operator causes the machine to perform desired operations on data entered into the machine by depressing an appropriate command key for the operation desired. Electric tabulating equipment may be arranged to cause the equipment to select certain data desired from the punched card input and to perform certain operations with that data. Some of the smaller and less expensive electronic calculators are controlled by means of wired control panels similar to those used in electric tabulating equipment.

The larger, more versatile electronic computers, however, are controlled by means of a stored program. A program is a detailed set of instructions for the performance of a problem written in terms that the machine can interpret and act upon. These instructions must be entered into the machine through

one of the input devices and stored in memory. The internal circuits of the machine are such that properly coded instructions can cause the machine to carry out the instructions in the sequence directed by the instructions themselves.

Several stages of preparation are required to prepare a program for a particular problem:

- (1) The procedure is analyzed into basic operations which the machine can perform. The operations must be arranged in proper sequence. It is usually helpful to draw a flow chart for this purpose. The procedure analysis and flow charting is probably the most important as well as the most costly portion of the program preparation.
- (2) The operations must then be written in terms the machines can understand. Such instructions may consist of two parts, the first representing the operation to be performed and the second part representing the location of the data upon which the operation is to be performed. The complete operational step, including operation part and data address, is known as an "instruction." A complete series of instructions constitutes a "program."
- (3) The program is read into memory from any of the input devices by a loading procedure.
- (4) Manual controls (or other methods) may direct the machine to the first program step. The machine will then automatically execute that instruction and proceed in sequence to the following instructions in the order determined by the loading procedure or by the instructions themselves. The final instruction in the sequence would be that to stop the machine at the conclusion of the problem.

The use of the stored program has permitted great flexibility in computer operations. Exception routines may be built into a program which will permit the machine to handle automatically any deviation from normal procedure which the programmer can foresee and for the handling of which instructions can be developed. Various checking routines can also be included in the program.

The number of instructions required in a program for any particular operation may be very lengthy. I have been informed that in the Univac application at the General Electric Company's Louisville plant, the payroll application involves 40,000 instruction steps. The preparation of such a program obviously requires several man years of procedures analysis and methods work.

Operating Time

Science perfected rapid calculation by means of electronics years ago. Successful application of this method of computation to accounting problems has been retarded by the necessity of developing methods of input and output of data that would keep pace with the calculating speed. Development of paper and magnetic tape and high speed printers, as well as high speed punched card readers and punches, has now progressed to the point where the high calculating speed of electronic computers can be effec-

tively utilized in clerical processing. The following indicates calculating speeds for eleven digit numbers now available:

Additions or subtractions.....	1,900 to 2,500 per second
Multiplications.....	250 to 450 per second
Divisions.....	250 per second, approximate
Comparisons.....	2,500 per second, approximate

The speed currently available in input-output devices is illustrated by the following maximum repetition rates:

Card readers.....	250 cards per minute
Card punches.....	100 cards per minute
Printers.....	900 lines per minute
Typewriters.....	600 characters per minute

Data may be read from or written on magnetic tape at a maximum rate of 15,000 characters per second.

Automatic Sequencing of Operations

Let us consider a simple payroll operation as it would be set up for computer solution.

A master tape record is maintained which contains successive records for each employee showing: Employee badge number, rate per hour, withholding tax class, year-to-date earnings, year-to-date withholding tax, quarterly F. I. C. A. tax. A punched card is prepared for each employee showing employee's name, social security number, badge number, address, straight-time hours, overtime hours. Certain constant data are entered into the computer for: Value of each tax exemption, withholding tax rate, F. I. C. A. tax rate, portion of annual wages subject to F. I. C. A. (\$4,200). The previously prepared program is read into the machine.

The punched card time record and the master tape record are then read into the machine which is programmed to compute automatically in one operation, the regular and overtime pay, gross pay, withholding tax, F. I. C. A. tax, net pay and new year-to-date totals. The payroll checks and payroll register can be printed and a new master tape written for use in processing the subsequent payroll or for preparing tax returns.

Persons familiar with tabulating procedures can envision the number of passes through various machines required to complete this operation on tabulating equipment. The advantage of electronic equipment is, of course, even greater when additional factors must be worked into the problem.

Ability to Make Logical Decisions

Electronic computers not only can follow a fixed sequence of program steps, but can also be

programmed to make certain decisions and to follow alternative instructions when special conditions are noted. For example, in the previously cited example of a payroll problem, F. I. C. A. tax is to be computed only on the first \$4,200 of annual wages. The program for this problem would contain alternative instructions for cases where the year-to-date earnings are less than \$4,200, where they are greater than \$4,200, and where they are less than \$4,200 in the old year to date but greater than \$4,200 in the new year-to-date totals. In each instance the machine would recognize the appropriate condition and follow the appropriate subroutine required to make the computation.

This ability of the machine permits selection of the correct rate from a rate table for a billing operation and also permits the inclusion in the program of special instructions for handling exceptions from normal procedure which must be manually processed in a tabulating installation.

Volume of Internal Storage

One characteristic of electronic computers which expands the scope of the equipment tremendously is the ability to store internally, in memory, data to be processed, instructions for processing, and results. Such internally stored data can be remembered by the machine whenever required. Substantial memory capacity permits the han-

dling of table look-up problems, of which a billing operation may be typical. This type of problem may require storing complete rate tables running into many thousands of items.

Time Savings Resulting from Use of Electronic Equipment

I have accumulated some illustrations of time savings resulting from use of electronic equipment. This information has come from various sources. Some of the illustrations are based on operating installations while others are based on studies that have been made for planned installations:

- (1) A set of equations was developed for an engineering problem. Each solution required about a month with a desk calculator. Two weeks were spent in formulating a program for electronic calculation. Each solution with new values required 35 minutes on a Burroughs UDEC. (This type of problem can be handled on a service bureau basis.)
- (2) The General Electric payroll application for 12,000 employees is stated to require two hours per week on the Remington-Rand Univac plus four hours of independent tape to printer operations.
- (3) IBM representatives cited a payroll study involving 35,000 attendance cards and 139,000 job tickets per week. Preparation of payroll and labor distribution was stated to require 15½ hours on the IBM Type 702 plus the independent operation for 8 hours of card to tape conversion and 9.7 hours for tape to printer.

Types of Business Problems to be Handled by Computers

Electronic computers are capable of handling most operations that can be done on electric tabulating equipment. In addition, almost any problem that can be formulated mathematically can be solved by computers. In all cases, of course, a study would have to be made to determine whether the computer solution would be more economical than other methods.

Accounting operations which have been most widely considered for adaptation to computers include:

- Payroll calculation and preparation including labor distribution and payroll tax calculations
- Inventory records and control
- Material scheduling
- Insurance records
- Budget and forecast preparation
- Sales, billing and accounts receivable records.

Conversion to Electronics

Representatives of International Business Machines Corporation have stated that their original calculations indicated that the potential market for their Type 702 large scale computing system was limited to the 200 largest corporations in the country. As additional applications of the equipment have been planned and as more companies have studied its use, a much wider market is envisioned. We are in-

formed that they now believe that any organization with more than 4,000 employees is a prospective user of this equipment.

One development to be noted is the centralization of data processing as a separate service function. I believe that this is a trend inherent in the development of automation in clerical processing.

Personnel Requirements for a Computer Program

Early applications of computers were principally in the scientific field. Mathematicians discovered that computers were an invaluable aid in solving mathematical problems. As a result, the majority of those trained in computer applications are mathematicians. The application of computers to business data processing has probably been retarded by a lack of communication between those who are familiar with electronic equipment and the accountants who are most familiar with data processing requirements.

Where a computer is to be utilized for the solution of mathematical problems such as those involved in linear programming, the formulation of the problem is primarily a mathematical exercise and requires the services of a person conversant with mathematical techniques. Where, however, business data processing is involved, and the computer is to be used primarily for purposes of increasing the degree

of automation in performing clerical operations, the primary responsibility for fitting the computer into the accounting system must rest on accountants. These accountants must be skilled in the methods and procedures field and must have a general knowledge of computer organization and logic. Inquiries from both suppliers and users of electronic equipment indicate that such personnel require no specialized knowledge of either higher mathematics or basic electronic engineering.

Conclusion

Electronic equipment is just another type of office equipment that can result under certain circumstances in substantial cost reductions and more effective information for management. Conversion to electronic equipment will require tremendous amounts of systems and procedures analysis. We should be able to render service in the analysis of procedures and accumulation of data required for any installation of electronic equipment.



Pegboard Accounting Methods

BY L. VLAHANTONES

Pegboards or accounting boards are one of the many tools the accountant may use in the art of recording, classifying and summarizing data. The pegboard method reduces operational time for recording business transactions and still avoids any sizable investment in equipment. It may be called the interim method between hand recording and machine recording. Pegboard systems can be used in accounting for sales, accounts receivable, purchases, payrolls, accounts or vouchers payable, cash receipts, cash disbursements, sales analysis and material control. By the use of pegboards it is possible to record transactions simultaneously in two or more records by placing forms with spot carbon backings on a board, overlapping them in "shingle" fashion, and through proper alignment of the carbon backed forms, record the transactions with one writing on the several records.

Payrolls

The pegboard system has been most commonly applied to payroll accounting work. It is used for preparing simultaneously the payroll check, payroll journal, and the employees' earnings record card. Some equipment provides for pre-

listing employees' names through use of addressograph plates. With other equipment the names may be handwritten on the check stubs. Through the use of carbon backings the names would appear on the payroll register. The uniform perforations of the checks, the payroll journal sheets and the employee earnings record cards, permit the arrangement of a number of these in shingle fashion.

In some systems the checks are preshingled with carbon strip across the back of the check stub. A payroll journal with a carbon sheet backing and the employee earnings record cards are also shingled to the board. With one writing on the check stub the identical information will be recorded on the payroll journal and on the employee earnings record card. The folding over or tearing off of the check and the removal of the top employee earnings card places the records in order for writing the next payroll check.

The bookkeeper, upon completion of the page or the payroll, foots and crossfoots the payroll journal. If no errors are detected, the bookkeeper is certain that no footings or copying errors exist on the check stub and employee earnings record cards. If an error is detected, the

three forms can be corrected immediately.

Accounts Receivable

There are two basic operations in the bookkeeping for accounts receivable (1) the recording of the sale through the sales journal and (2) the recording of cash receipts through the cash receipts journal.

In recording the sale, three forms are used; sales journal, customer's statement and accounts receivable ledger card. These three forms are collated for use on the accounting board. Each customer's statement and ledger card are kept together in a file. In the posting operation, the statement and ledger card are pulled from the file and placed on the left side of the board in posting position. Carbon is placed over ledger card and sales journal which receive a carbon copy of all postings to customers' statements. Date, reference or description, debit, old and new balances are posted and the distribution of sales is entered to the columns at the right of the journal form plus other data if required.

As each journal page is filled, the columns are footed and proved. The total of the previous balance column plus the total of the debits should agree with the total of the new balance column. It should be noted that this procedure proves the new balances are computed correctly, but not that the old balances were picked up correctly.

In the recording of cash receipts, three forms are also used, but now the cash receipts journal replaces the sales journal. Cash receipts are posted in the same manner as sales but on the credit side.

Accounts Payable

There are also two basic functions in respect to accounts payable (1) recording the invoice in the purchase journal and (2) recording the payment of the invoice in the cash disbursements journal.

For recording invoices in the purchase journal only two forms are required, the vendor's ledger card and the purchase journal. Carbon is placed over the purchase journal, thus making a carbon impression of all postings to the vendor's ledger card. Date, reference or description, credit and new balance are posted and additional data may be posted to the purchase journal. Here again, columns are footed and proved before the work is put away.

For recording payments, checks can either be placed on the board individually or preshingled and the vendor's ledger card and cash disbursements journal are collated on the board. Cash disbursements are recorded in the same manner as the entries in the purchase journal.

Vouchers Payable

This adaptation of pegboard accounting, which I have seen in successful use, is basically the same as for accounts payable but no

vendors' ledger cards are maintained. When an invoice comes in, a voucher check is headed up with the vendor's name and address and placed over the first open writing line of the purchase journal. When payment is made, the lower part of the voucher check is pegged in correct alignment over the cash disbursements journal and the check can then be written or typed. The original copy of the check voucher is sent to the vendor and the duplicate copy of the voucher can be filed with invoices paid.

Some of the advantages and disadvantages of pegboards are as follows:

Advantages:

1. Several forms can be written in one operation
2. There is a daily proof of accuracy
3. It is easy to keep the records up to date
4. There is no possibility of transposition errors between records
5. Little or no personnel training is required
6. There is no high installation cost
7. Operation is silent

Disadvantages:

1. There is a certain amount of inflexibility in the system
2. Improper alignment of forms makes reading difficult
3. The work is slower than bookkeeping machines with automatic page totals
4. The work is usually not as neat as

when performed on bookkeeping machines

Pegboard accounting will reduce operational time over hand posting. In considering a pegboard system, one of the factors to be considered is whether standard forms of the selected system will be adaptable to the enterprise involved. Such standard forms are substantially less expensive than specially printed forms.

Pegboards may be purchased at prices from \$7.50 to \$100.00 and the average board costs approximately \$20.00. If standard forms can be utilized, the cost is hardly in excess of the cost of the stationery that would otherwise be used.

Pegboard accounting may also be used advantageously for simplifying routines in sales analysis, cost analysis, labor distribution, expense distribution, inventory or expense control, production reports, budgets and in the assembly of figures for consolidated financial statements.

To summarize, pegboards are an inexpensive tool which reduces operational time over hand posting. They can be used for many types of accounting operations, where the high cost of machine investment would not be profitable. We should be able to make suggestions for the use of this device, to many of our smaller clients.



JOHN HOOD, JR.

Editorials

John Hood, Jr.

The death of John Hood, Jr. on August 4th, 1954, has made a gap in the ranks of our partnership which is keenly felt by his associates, who cherish his memory as a steadfast and devoted friend over many years.

Mr. Hood was born on June 9th, 1878, in Camden, N. J., and received his early education in Philadelphia. On the staff of a client for some years, he developed an ambition to become a public accountant, and became a member of our staff in 1907. He obtained his certificate as a Certified Public Accountant in Pennsylvania in 1912 and later received certificates from 12 other states.

On January 1st, 1918, he was made a member of the Firm and during the thirty-six years of partnership he devoted all his energies to the interest of the Firm and its clients. While he appreciated the importance of writing and speaking on the problems of accountancy, he felt his own field lay in the direction of carrying on the basic work of the Firm. His motto may well have been—"This one thing I do." His devotion to the Firm, his integrity, independence and sound judgment were such dominant characteristics as to make his professional career one of great stature.

When the duties of administration were added to his responsibilities, he continued to follow the same line of devotion to duty. His administration was marked with a sincere sympathy for members of the organization when illness, disability or death occurred, and he was always ready to render adequate assistance in such circumstances. Fortunately, he was able to continue his activities until within a few days of his decease. His passing is a loss not only to his partners but also to the entire organization under his direction.

Mr. Hood was a member of numerous national and state professional organizations, such as the American Institute of Accountants, National Association of Cost Accountants, and certified public accounting societies in Pennsylvania, New York and other states.

He held membership in several clubs—Tavistock, Pine Valley, and Seaview Country; also, The Mid-day, University, Vesper, Reciprocity of Camden, N. J., and Seignioriness of Canada.

He is survived by his wife, the former Mildred Redman; a son, John, 3d, and three stepchildren, Mrs. Margaret M. Siefert, Mrs. Mildred M. Stow and Frederick C. Metzler. To all of them we extend our deepest sympathy.

The 1954 Firm Meeting

The 1954 Firm Meeting was held at Seaview Country Club, Absecon, N. J., on September 27-October 1. There were present two hundred twenty-six members of the firm, staff and guests. The important new Internal Revenue Code of 1954 was the subject of interesting and informative lectures by several partners and staff members of the tax department; another session was devoted to management accounting,

including material on the new electronic machines now available.

An evening dinner party was held at which the gaiety of the occasion was enhanced by the presence of the lady guests, and at which the art of the prestidigitator was exemplified by H. Ronald Paige of the Philadelphia office. Various sports were enjoyed and the play for the Lybrand golf cup resulted in its award for the ensuing year to Charles E. Davis, Birmingham office.



Notes

The preceding (fall 1954) issue of the JOURNAL was devoted entirely to the Internal Revenue Code of 1954; space considerations necessitated the omission of the usual Notes. The following records news items since June, 1954.

Baltimore Office

Members of the Baltimore office on committees of the Maryland Association of C. P. A.'s for the 1954-1955 year are as follows:

Accounting and Auditing Procedures—
C. V. Blum
By-laws—J. A. Engel, Jr.
Cooperation with Bankers and Other Credit
Grantors—A. R. Ransom, Jr.
Legislation—A. Nastasi
Professional Ethics and Practitioners Ad-
visory—H. C. Chinlund
Program—D. W. Pfoutz
Publicity and Public Relations—J. B.
Bourne
Social—E. J. Miller and J. D. Muth

Birmingham Office

The Birmingham office is proud to have on display "The Lybrand, Ross Bros. & Montgomery Cup" won by Mr. Charles E. Davis at the recent firm meeting.

Mr. Leon L. Palmer has been admitted to memberships in the Alabama Society of Certified Public Accountants and the American Institute of Accountants.

Mr. Anthony J. Dilenno is serving as a Team Captain for the Birmingham Chapter of the NACA.

Boston Office

Mr. Perry has been elected Vice President of the American Accounting Association.

Mr. Hunter is serving his fourth term as Treasurer of the Boston Chamber of Commerce.

Mr. Herman Stuetzer, Jr., has recently been appointed to the Committee of Federal Income Taxation of the Section of Taxation of the American Bar Association. He was reappointed for his third term as Chairman of the Committee on Taxation of the Massachusetts Society of Certified Public Accountants, Inc. and also was reappointed a Member of the Committee on Federal Taxation of the Boston Bar Association, as well as Chairman of the Federal Tax Liaison Committee.

Mr. Stuetzer's recent speaking engagements in Boston were:

"Part I, Subchapter C of the Internal Revenue Code of 1954" on September 17 at the Northeastern University Federal Tax Institute.

"Highlights of the Internal Revenue Code of 1954" on September 21, 1954 to the Boston Executives Club.

Chairman of the panel on "Accounting Provisions of the 1954 Code" on October 1, 1954 at the New England Federal Tax Institute.

Mr. Victor Cohen has been engaged for the fourth successive year by Northeastern University, School of Business Administration, to teach a course in federal taxes. Mr. Cohen spoke at the Tax Forum conducted by Northeastern University Tax Institute on September 17 and 18, 1954. He was guest speaker at the "kickoff dinner" of the accountants' section of the Combined Jewish Appeal in Boston on October 27, 1954, and panel speaker at the Fall Forum of the Boston Chapter National Association of Cost Accountants on October 28, 1954. The September, 1954 issue of the Massachusetts Society "News Bulletin" contained an article by Victor Cohen entitled "1954 Massachusetts Tax Changes."

Messrs. Cohen and Stuetzer each spoke at the all-day "Forum on the 1954 Internal Revenue Code" held in Boston by the Massachusetts Society of Certified Public Accountants. Mr. Cohen's talk dealt with the income provisions of the new Code, while Mr. Stuetzer spoke on Subchapter C, corporate distributions and adjustments.

Mr. Joseph B. Fyfe has been appointed a Member of the Committee on Meetings of the Massachusetts Society of Certified Public Accountants, and has been named an Associate Director (Education) of the Boston Chapter of N. A. C. A. He has also been appointed Administrative Vice Chairman of the West Metropolitan Division of the 1955

Greater Boston Red Feather Campaign.

Mr. Roscoe E. Irving is teaching a course in Elementary Accounting in the Evening Division of the Boston University College of Business Administration.

Mr. Elmer A. Oesterlin is teaching a course in Managerial Accounting at Northeastern University.

Chicago Office

We regret to report the death of Mr. Daniel J. Sullivan, 29, on September 1, 1954. Dan started with the firm as office messenger on January 19, 1946 and became a member of the staff in October, 1949. He was ill only a short time and his death came as a great shock to the entire office for he was well liked by all who knew him. He is survived by his mother and father, two sisters and two brothers, to whom we extend our deepest sympathy.

The fourth annual Chicago Office Golf Outing was held on Thursday, September 2, 1954, at Calumet Country Club. There were 53 present, including Mr. Thomas W. Snowden from St. Louis, Mr. A. H. Degener and Mr. Thomas W. McKibben from Tulsa, and Mr. Leo Tinkham and Mr. Robert W. Myers from Rockford; 36 played golf and since the weatherman was kinder to us than last year, most

of them finished the 18 holes. Mr. Joseph J. Marek had Low Gross score (3 years out of 4) and also had the distinction of making a hole-in-one on the 143-yard 8th hole in his "warm-up" round in the morning. Low net prizes were won by Mr. Leo Tinkham, Mr. Robert E. Miller and Mr. George Bartunek.

Mr. Burke was a member of the panel which discussed the subject "The Value of a C.P.A. Report to the Credit Man" at a technical session, sponsored by the Chicago Association of Credit Men and the Illinois Society of Certified Public Accountants. Mr. Burke has been reelected a director of the Chicago chapter of the N.A.C.A. He has also been elected auditor of the Illinois Society of Certified Public Accountants.

Mr. John W. Conrad spoke before the Rotary Club of Rockford, Illinois, on September 2, 1954 and the Belvidere, Illinois Rotary Club on September 22, 1954 on the subject "Highlights of the Revenue Act of 1954."

Mr. Julian O. Phelps conducted one of the Income Tax Classes as a part of the Adult Education Program of J. Sterling Morton High School and Junior College, Cicero, Illinois. He was also a member of a panel in the "Second Institute on Federal Taxation," sponsored by De Paul University, and of the Panel which discussed "Reorganizations and Liquidations" at the "Seminar on the 1954 Internal Rev-

enue Code" of the Illinois Society of Certified Public Accountants at Chicago on September 16-18, 1954.

Mr. Phelps recently became a member of the Quarter Century Club and received a suitably engraved wristwatch.

Mr. Joseph E. Tansill spoke before the Downers Grove Kiwanis Club on the subject "Year-End Tax Planning."

Mr. Thomas G. Cook and Mr. John W. Eichman have been awarded their Illinois C.P.A. certificates on the basis of the May, 1954 examination, and Mr. John C. Bain has been awarded his certificate from the State of Indiana on the basis of the November, 1953 examination.

The following are serving on committees of the Illinois Society of Certified Public Accountants:

Mr. J. E. Burke—Cooperation with Bankers
Technical Meetings

Mr. J. O. Phelps—Taxation

Mr. C. W. Lutz—Legislation (Vice Chairman)
Unauthorized Practice of Accounting

Cincinnati Office

The annual golf party of the Cincinnati office was held at the Terrace Park Country Club. The highlight of this affair was the presentation by Mr. Dennis of gold wristwatches, commemorating twenty-five years' service, to Miss Nettie Snyder, S. Lester McCormick and Abner J. Starr.

Mr. Dennis has been serving as Chairman of an Advisory Committee to the Treasurer of the City of Cincinnati in connection with the recently enacted Cincinnati Income Tax Law.

Mr. Waterfield was reelected a State Director of the Ohio Society of C.P.A.'s for the coming year.

Mr. Abner J. Starr has been appointed Chairman of the Auditing Committee for the 1954 Community Chest Campaign in Hamilton County. He also was recently reelected Treasurer of Maketewah Country Club.

Mr. Charles L. Schmidt appeared on the local television program known as "Tax Facts" sponsored jointly by the Cincinnati Chapter Ohio Society of C.P.A.'s and the Cincinnati office of the Internal Revenue Service.

Messrs. Robert W. Davis and Stanley E. Walker are new members of the faculty as lecturers in accounting at the University of Cincinnati Evening College.

Cleveland Office

Messrs. John P. Buleza and Joseph J. Dutko have received their C. P. A. certificates from the State of Ohio.

Mr. Alfred W. Lindstrom has been appointed associated editor of the News Letter of the Cleveland Chapter of the N. A. C. A.

Mr. George B. Talmage has been appointed a member of the Taxation

and Finance Committee of the Citizens League of Cleveland, and Associate Director of Member Attendance of the Cleveland Chapter of the N. A. C. A.

Dallas Office

Mr. Godfrey W. Welsch has given recent talks to various organizations as follows: September 16, N.A.C.A., Houston, Texas, on "Natural Resources Under 1954 Code;" September 24, American Mining Congress, San Francisco, "Accounting Periods and Methods Under 1954 Code;" October 21, Dallas Petroleum Accountants' Society, "Acquiring Properties Through Oil Payments and Related Methods;" October 27, Texas Tech Tax Seminar at Lubbock, "Corporate Distributions and Adjustments—Subchapter C of the 1954 Code."

His article on "Natural Resources Under the 1954 Code" appeared in the September issue of "Taxes—the Tax Magazine."

Detroit Office

The following partners and staff members are serving in the capacities indicated for various organizations for the year 1954-55:

Michigan Association of Certified Public Accountants:

D. M. Russell—Chairman, Committee on Legislation

P. G. Righter—Member of Board of Directors

- L. W. Hobbs—Member, Committee on Relations with Attorneys; Member, Committee on Relations with Bankers
- R. L. Williams—General Vice-Chairman, Committee on Programs
- H. F. Spengler—Member, Committee on Professional Education
- C. J. Code—Member, Publications Committee
- N. A. Bolz—Member, Accounting and Auditing Procedure Committee
- J. J. Fox—Member, Committee on Professional Ethics and Unauthorized Practice
- L. J. Wilson—Member, Committee on Federal Taxation
- J. C. Padgett—Member, Committee on Personnel
- W. R. Richards—Member, Auditing Committee
- N. A. C. A., Detroit Chapter:
- L. J. Wilson—Associate Director
- J. J. Fox—Team Captain
- E. W. Reynolds—Member, Reception Committee
- Systems and Procedures Association of America, Detroit Chapter:
- J. J. Fox—Member, Publications Committee

Mr. Eldin H. Glanz presented a paper on Federal Estate and Gift Taxes at the Federal Tax Institute, University of Nebraska, September 30 to October 2, 1954.

An article by Mr. Robert L. Williams entitled "The Cost of Poor Internal Control" was published in the September-October, 1954 issue of "Systems" magazine.

Houston Office

The office is represented on committees of the Texas Society and Houston Chapters by:

Texas Society of Certified Public Accountants:

W. P. Crouch:

Member of Committee on Cooperation with Bankers

Member of Committee on Chapter Coordination

Member of Planning Sub-Committee of each of the above

Carl E. Patton:

Member of Committee on Public Relations—also member of Planning Sub-Committee thereof

Houston Chapter of the Texas Society of Certified Public Accountants:

W. P. Crouch:

Member of Committee on Committee Appointments

Member of Committee on New Members

Carl E. Patton:

Member of Committee on Accounting Principles and Auditing Procedures

Los Angeles Office

The Los Angeles office and members of the firm throughout the country were saddened by the sudden death on October 22, 1954 of Mr. Charles P. Skouras, President of National Theatres, Inc. Mr. Skouras was known throughout the world as a philanthropist and dynamic business executive. Our association with him and his enter-

prises has continued for more than twenty-five years. The firm was honored by the inclusion of Mr. Warner as an honorary pall bearer at the services for Mr. Skouras on October 26, 1954.

The Los Angeles Chapter of the California Society of Certified Public Accountants was host to Internal Revenue Commissioner, T. Coleman Andrews, at luncheon on October 29, 1954, at which Mr. Bowles presided as President of the chapter. Mr. Loyd Wright, President of the American Bar Association, the Honorable Norris Poulson, Mayor of Los Angeles, and Mr. Charles Detoy, President of the Los Angeles Chamber of Commerce, were among the head table guests. Almost one hundred client representatives were guests of the firm at this affair.

Mr. Warner has been appointed to the Editorial Advisory Board of the Journal of Accountancy and to the staff of the newly-created "What to Read" Department of that publication. Mr. Warner addressed the Missouri Society of C.P.A.'s, St. Louis Chapter, on October 13, 1954, on the subject "Relations between Accountants and Lawyers," drawing particularly upon recent experiences in California.

The following staff members have been admitted to membership in the American Institute of Accountants:

Irving L. Van Dyne

Louie M. Bradley
Charles L. Davidson

Mr. Oscar Chavez received his California C.P.A. certificate.

Louisville Office

With much sorrow we record the death of one of the newest members of the Louisville office staff, Mr. William E. Hunter, on October 14, 1954, at the age of 23.

Mr. Huss participated in a panel at the annual meeting of the Tax Executives Institute held at French Lick, Indiana, on September 7, 1954. The subject of the panel discussion was "Changes Under H.R. 8300 Permitting Tax Accounting of Deferments and Accruals to Conform More Closely to Normal Corporate Accounting."

Mr. Louis Sorbo spoke to the Lions Club of Louisville on October 19. The subject was "Changes Brought About by the 1954 Internal Revenue Code Affecting Individuals."

Mr. Harold W. Glore, newly elected Director of the Kentucky Society of Certified Public Accountants, is to be in charge of the Entertainment Committee and the Publications and Library Committee for the coming year. Mr. Huss has been appointed Chairman of the Professional Ethics Committee.

Other members of the staff, who have been appointed to committees

of the Kentucky Society of Certified Public Accountants for the 1954-1955 term, are as follows:

Curtis J. French—Accounting and Auditing
Louis S. Sorbo—Education

J. Martin Conder—Publications and Library
William R. Hindman—Cooperation with Rural Bankers

New York Office

Mr. Jennings was elected Vice President of the American Institute of Accountants for 1954-55 at the annual meeting in October.

Mr. Batzer spoke on "Events Subsequent to the Balance Sheet Date" at the 21st Annual Conference of the New York State Society of C.P.A.'s.

Mr. Bardes addressed the Springfield, Mass., Chapter of National Association of Cost Accountants on December 15, 1954 on "Highlights of the 1954 Revenue Code."

Mr. Richardson spoke on aspects of the 1954 Revenue Code affecting corporations at the Federal Tax Conference sponsored by the Tax Council of the Chamber of Commerce of Philadelphia. He also spoke on "Federal Tax Planning" at the Fifth Annual Accounting Conference of the School of Business Administration, Rutgers University.

Mr. Fred W. Land spoke on "Cost Accounting for the Smaller Business" at a meeting of the New York State Society of C.P.A.'s, November 30, 1954.

The following men successfully completed the New York, May, 1954, C.P.A. examinations:

Carroll, John P.
O'Brien, Raymond J.

Philadelphia Office

Mr. Mahon acted as Chairman of the Tax Symposium of the Philadelphia Chamber of Commerce at The Bellevue-Stratford, Philadelphia, on "The 1954 Revenue Code," on August 18.

On September 8, he spoke at the annual meeting of the Tax Executives' Institute at French Lick, Indiana, on the subject, "Alternative Methods of Computing Depreciation under the Provisions of the 1954 Code."

He also was the speaker in Philadelphia, on September 16, at the first technical session of the 1954-1955 season of the Philadelphia Chapter of the National Association of Cost Accountants. The topic was "The Revenue Code of 1954."

Mr. Mahon has taken over the "Tax Clinic" column of the Journal of Accountancy, succeeding the late J. K. Lasser of New York.

Mr. Mahon spoke on the various facets of the "Internal Revenue Code of 1954" for the following groups:

Oct. 5—Chairman of the session of The Pennsylvania Tax Institute, Philadelphia;

- 18—Chairman of Special Tax Session, American Institute of Accountants, New York City, on "Partnership Provisions;"
- 26—Controllers' Institute, Baltimore, Md.;
- 28—National Security Dealers and Investment Bankers Association, Philadelphia;
- Nov. 2—Scientific Apparatus Makers Association, Pocono Manor, Pa.;
- 8—New York University Tax Institute;
- 15—Tax Study Group, Philadelphia Chapter of Pennsylvania Institute of C. P. A.'s.

Mr. Hewitt, who is serving a two-year term as a member of the National Board of Directors of the National Association of Cost Accountants, was one of four members of the Philadelphia Chapter of the NACA to represent the chapter at the 35th Annual International Cost Conference, held at Chicago, Illinois, June 13-17. On October 16th, Mr. Hewitt discussed "The Forthcoming Legislative Challenge to the Profession" at the meeting of State Society Secretaries in New York City. He was the opening speaker at the 1954 Accounting Forum held at Villanova University on November 17th, sponsored by the Pennsylvania Institute of C.P.A.'s in co-operation with seventeen colleges and universities in the Philadelphia area, the N.A.C.A. and the Institute of Internal Auditors. His subject was "Accounting—The Basis for a Successful Career." On November 30th, Mr. Hewitt was Chairman of

the dinner session of the 1954 Discussion Forum of the Philadelphia Chapter of N.A.C.A. at which Vernon D. Northrup, Director of Finance of the City of Philadelphia, spoke on "Performance Budgeting to Control Tax Dollars."

Mr. Edward F. Habermehl addressed a meeting of the Springfield-Whitemarsh Lions' Club at Flourtown, Pa., on "Highlights of the 1954 Revenue Code." On October 11th he spoke at the 1954 Federal Tax Seminar of York, Pa., Junior College. His subject was "How the New Tax Affects Individuals and Families." On October 19th, he spoke on the "Internal Revenue Code of 1954" at the Kiwanis Club, Ambler, Pa., and on October 27th he addressed the combined groups of the Camden County Chamber of Commerce, Bar Association, Bankers Association, Board of Realtors and Certified Public Accountants, in Camden, N. J., on the subject "Individuals, Deductions and Depreciation under the 1954 Revenue Code."

Mr. Edward P. Mullen acted as Moderator of the accounting meeting of the Philadelphia Chapter of the Pennsylvania Institute of C.P.A.'s, held at the Hotel Sylvania, on September 20th. The subject was "Long-Form Reports."

Mr. Herman C. Heiser, on October 21st, addressed the Hagerstown, Md., Chapter of the National Association of Cost Accountants on the subject of "Direct Costing." On

October 26th, he participated in the discussion forum of the Philadelphia Chapter of N.A.C.A. on "Effecting Cost Control by Budgeting Procedures."

Mr. Heiser also took part in a discussion forum of the Lancaster, Pa., Chapter of N.A.C.A. on October 28th as a member of the panel on "Control Study of Budgeting." On November 17th he spoke at one of the meetings at Villanova University, where the Annual Philadelphia Accounting Forum was presented, his subject being "Collateral Services in Public Accounting."

Mr. Richard T. Farrand addressed the Philadelphia Chapter of National Office Management Association on November 10th on the "Internal Revenue Code of 1954."

Mr. Raymond E. Graichen was one of the speakers at the September 27th session of The Pennsylvania Tax Institute's series of talks on the "Internal Revenue Code of 1954," at Philadelphia.

On October 23rd he spoke on the subject "Depreciation, Loss Corporations and Miscellaneous Deductions under the 1954 Internal Revenue Code" at the Wilkes College Tax Clinic, Wilkes-Barre, Pa.

He also spoke on "Depreciation and Net Operating Losses" during the month of October before the Pennsylvania Society of Public Accountants, Philadelphia.

Mr. William F. Scheid, Jr., spoke on "The 1954 Code Provisions with Respect to Deferred Compensation"

at the Wilkes College Tax Clinic, Wilkes-Barre, Pa., on October 30th.

Mr. Rufus F. Alkins has been elected to membership in the Philadelphia Chapter of the National Association of Cost Accountants.

The following members of our Philadelphia organization were elected or appointed for the year 1954-1955 at the annual meeting of the Pennsylvania Institute of Certified Public Accountants, held at Bedford Springs, Pa., June 27 to 30, 1954:

PENNSYLVANIA CPA SPOKESMAN—
EDITORIAL BOARD

Harry C. Zug, Chairman

COMMITTEES ON:

Nominations

James J. Mahon, Jr., Chairman

Professional Ethics

George A. Hewitt, Chairman

Past Presidents

T. Edward Ross

George A. Hewitt

Advisory Sub-Committee (Legislation)

George A. Hewitt, Chairman

Membership

Gustave F. Schweitzer

Annual Meeting

James E. Meredith, Jr.

By-Laws and Canons of Professional Ethics

Harry C. Zug

Cooperation with the Bar

James J. Mahon, Jr.

Pittsburgh Office

Messrs. Gelbert, Kulzer and Bower have recently spoken before various professional societies, including the New York University

Tax Clinic, the National Secretaries' Society (Pittsburgh Chapter), the Pennsylvania Institute of Public Accountants (Pittsburgh Chapter), and the Rotary Club of Carnegie.

San Francisco Office

In the recent death of Mr. George T. Klink, the public accounting profession of California and L.R.B. & M. in San Francisco lost an outstanding pioneer and good friend. His parents left their native state, New York, in 1859 to come to the Pacific Coast, and he was born four years later. Early in his business career he entered the service of the Southern Pacific Railroad and rose to the position of general auditor. He resigned in 1904 to form, with Barton T. Bean and C. S. Black, the firm of Klink, Bean & Co., which later became L. R. B. & M.'s agents in California. In 1924, L. R. B. & M. acquired the firm's practice.

He helped organize the California Society of Certified Public Accountants in 1909, and served as its president in 1911-12.

Although he had no official duties, he regularly came to the office until the last few years. He had a phenomenal memory, and could almost always be depended upon to furnish background material on questions relating to engagements going back many years.

George Klink will be missed by all who had the privilege of knowing him.

The San Francisco office is represented in the year's activities of the San Francisco Chapter and California State Society of Certified Public Accountants as members of the following committees:

Claude Giles—State society committees on by-laws and resolutions and on relations with the bar; San Francisco chapter committee on education.

Robert Buchanan—San Francisco chapter committee on taxation.

Floyd Karg—State society committee on 1955 graduate study conference; San Francisco chapter committee on cooperation with credit grantors.

C. J. McDowell—San Francisco chapter committee on membership.

Mr. Richard B. Sims is membership associate director in the San Francisco Chapter of the National Association of Cost Accountants.

Messrs. Ben Druckerman and Gordon McCarthy have received their California C.P.A. certificates.

Floyd Karg was a panel member at a discussion of "The New Income Tax Law and You" at the October meeting of the Oakland-East Bay Chapter of the National Association of Cost Accountants. His topic was "Changes in Accounting Procedures and Methods."

Mr. Walter G. Draewell was elected vice president of the California State Board of Accountancy.

St. Louis Office

Mr. Snowden is chairman of the Committee on Cooperation with Bankers and Other Organizations

of the Missouri Society of Certified Public Accountants.

Mr. E. F. J. Meyer is chairman of the Auditing Committee of the St. Louis Control of the Controllers Institute of America.

Mr. Victor R. Frederick is a member of the Meetings Committee of the St. Louis Chapter of the Missouri Society of Certified Public Accountants.

Mr. Stephen D. Saboff passed the May C.P.A. examination in Illinois and has received his certificate from the University of Illinois.

Seattle Office

Mr. Edmund L. Basye and Mr. Allen L. Spaulding have recently received their C.P.A. certificates.

Tulsa Office

Mr. McKibben was guest speaker before the Tulsa Chapter of the Systems and Procedures Association of America and for the American Society of Woman Accountants. He is also beginning his fourth winter as an instructor in the downtown division of the University of Tulsa, teaching a class in auditing theory and practice.

Washington Office

Mr. Yager addressed the Cleveland Chapter of the N.A.C.A. on November 11, 1954, and the Racine-Kenosha Chapter of the N.A.C.A. on December 13, 1954. On both occasions his subject was "Highlights of the Internal Revenue Code of 1954."





